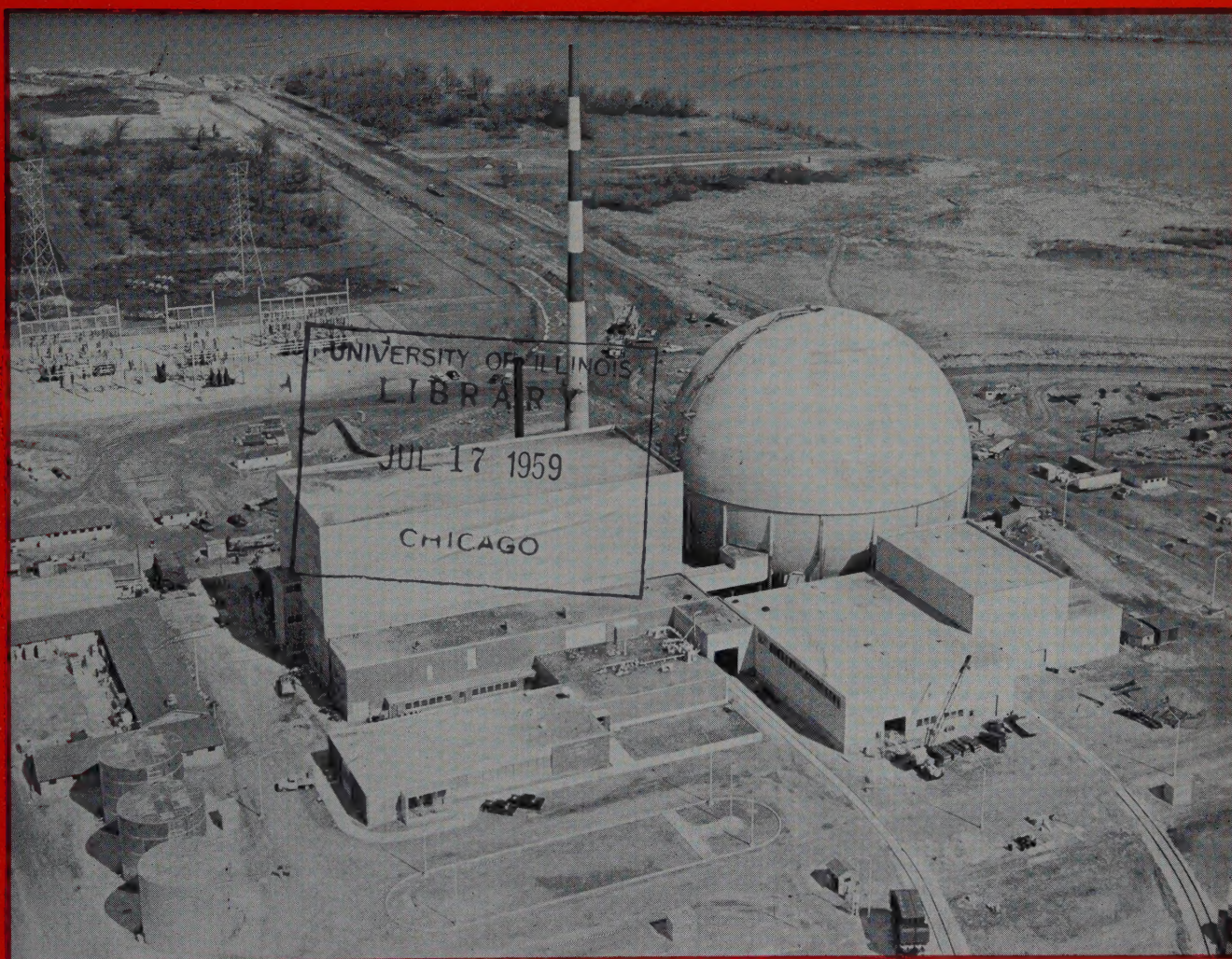




# *the* **ILLINOIS ENGINEER**



**DRESDEN NUCLEAR POWER STATION**  
(Story on Page 2 and 3)

**THE ILLINOIS ENGINEER**  
**JULY, 1959**  
**VOLUME XXXV, NO. 7**



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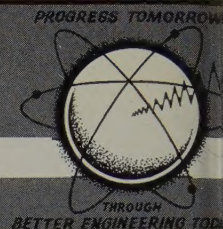




# THE ILLINOIS ENGINEER

ILLINOIS SOCIETY OF PROFESSIONAL ENGINEERS, Incorporated

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## I.S.P.E. DRIVES AHEAD

By L. D. HUDSON, FIRST VICE PRESIDENT

While President Magowan is showing good recovery progress, ISPE is demonstrating its ability as a first-rate professional organization.

Within the past two months actions taken by the Society have well earned the continuing support of men desiring to develop and improve the engineering profession:

**ISPE]** has done its part in controlling legislation designed to devalue professional engineering registration. (See the report of the Executive Director in this issue.)

**ISPE]** took an aggressive lead for the first time with fifteen licensed professions to assure a positive



LE VERNE D. HUDSON

action on legislation. The value of this to the Society's interprofessional relations program has been obvious. **ISPE** emerged respected and a leader.

**ISPE]** had an outstanding public relations development in recognition of the NSPE-ARMCO award winner, Arthur Beazley. The presentation of the winner to the Governor and to the Legislature gained friends, support, and public respect. The value of the news releases to Champaign County Chapter area and to ISPE has been great.

**ISPE's]** ethics and practices committee function received a well-earned reputation from the Department of Registration Education, reinforcing its actions on cases involving the illegal practice of professional engineering. This is reported in the minutes of the June 6, 1959, Board meeting.

These activities, along with the developing committee actions, are sharpening membership values. They are also bringing many new possibilities within the scope of ISPE action. There can be little dispute about the value of developing a long-range, aggressive legislative program. No one will argue long against the true worth of having eight or ten outstanding public re-

lations products each year. Good service to the professional engineer will become better service as the individual financial support and the personal activity increase.

## LEGISLATIVE REPORT

By L. C. GODDARD, Executive Director

The 71st General Assembly of the State of Illinois stopped the clocks at midnight Tuesday, June 30, to finish the work of its session in which some 2500 to 3000 bills were considered during the past six months.

This mass of legislation had six or eight bills in which the Illinois Society of Professional Engineers was interested and, in counting its achievements, the ISPE was extremely successful in what may be termed its first major legislative effort.

The Society gained stature and recognition for its activity in consolidating opposition to Senate Bill 46, the Governor's reorganization plan, which would have placed engineers, land surveyors, and architects into a Department of Labor and Industry. ISPE took the lead in bringing 15 other organizations together to oppose this plan. It was advocated that the Department of Registration and Education be left intact and that a study commission be established to study the feasibility of future changes. Before passing the Senate, the bill was amended with 26 amendments, most of which dealt with the functions of registration and which changed the original bill to take registration functions from several different departments and consolidate them into a Division of Registration in the Department of Finance. The bill as amended was killed completely in the executive committee in the House on Monday,

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## CHAPTERS VISIT NUCLEAR POWER STATION

On June 2, the Joliet Chapter was host to a group of over 150 engineers in a tour of the Dresden Nuclear Power Station. Included in the group were members of DuKane, Sauk Trail, Bloomington and Joliet Chapters. A buffet dinner was served at the Joliet Yacht Club following the tour.

The Dresden Station is located about twenty miles southwest of Joliet where the historic Kankakee and Des Plaines Rivers meet to become the busy Illinois River link in the Lakes to Gulf waterway. At Dresden, the largest all nuclear power plant in this country, the energy of the mysterious Atom will be harnessed to add 180,000 Kilowatts to Northern Illinois' expanding reservoir of electricity.

Private funds are paying for Dresden. There is no government subsidy. Originally planned for completion in 1960 construction is ahead of schedule and it may be ready this fall.

The station is a cooperative enterprise of Nuclear Power Group, Inc. Eight Companies make up the group including Commonwealth Edison Company, American Gas and Electric Service Corporation, Bechtel Corporation, Central Illinois Light Company, Illinois Power Company, Kansas City Power and Light Company, Pacific Gas and Electric Company and Union Electric Company.

Commonwealth Edison Company will own and operate Dresden, however, all members of Nuclear Power Group are participating in design, planning and construction of the station. When Dresden is completed, key personnel of all the Companies will, by actually taking part in the operation of the plant, be able to acquire the engineering leadership, the training and invaluable "Know-How" so essential to atomic power progress.

\$30,000,000 of the \$45,000,000 contract price plus site and overhead costs is being paid by the Commonwealth Edison Company. All members of the Nuclear Power Group share the remaining \$15,000,000 as research and development expense. General Electric Company's research contribution is in the form of a favorable contract price.

Dresden, as a "Going Concern" will be a regular producing generating station of the Commonwealth Edison Company system. In a broader sense, however, the plant will serve as a springboard for future nuclear power developments at home and abroad.

The full scale use of nuclear energy for generating electricity is a largely uncharted road. It involves extensive basic research and the evaluation of many

new scientific and engineering advances—it means the development and application of new metals and materials, manufacture of uranium fuel assemblies, new high heat transfer techniques, control instrumentation and radiation shielding. Thus the development of nuclear power will be evolutionary rather than revolutionary.

General Electric Company, as prime contractor, responsible for, "design, development and construction" of Dresden; Bechtel Corporation is Engineer-Constructor. General Electric's Vallecitos Atomic Laboratory Pilot Plant near San Jose, California and the AEC's Experimental Boiling Water Reactor Argonne National Laboratory near Joliet, provide research data for Dresden. Nuclear Power Group engineers get on-the-job training at these two experimental units.

Much of Dresden's design is like nothing we ever saw before.

While the turbine room is like that of the usual power plant, the sphere, housing the reactor, bears no resemblance to the conventional boiler room. The 198 foot diameter sphere encloses the reactor, steam separating drum, secondary steam generators, recirculating pumps, and auxiliaries necessary to form a "Steam Generator Package." This equipment replaces the conventional boiler.

The turbine building houses the equipment necessary for the conversion of thermal energy in steam into electrical energy. This includes the turbine-generator, feed-water heaters, condenser, pumps and associated auxiliary equipment. The equipment in this building is very similar to that in a conventional plant.

The Dresden Plant will have, also, a fuel handling building for the storage and inspection of new and spent fuel as well as auxiliary buildings. Operation of the entire plant is carried out from a single control room located at the west end of the turbine building.

The fuel handling building consists of a vault for the storage of new fuel assemblies and a canal for underwater storage of spent fuel. Water serves as a cooling and shielding medium for the still warm and radioactive fuel elements. Spent fuel is stored for three to four months to allow the after heat and radiation to decrease to a low level so that the fuel may be shipped in shielded containers for salvage of fissionable fuel materials or for permanent storage.

The reactor holds 488 individually replaceable fuel rods containing a total of 4,000,000 fuel pellets each 1/2 inch in diameter by 5/8 inch long, the entire core weighing 60 tons.

(Continued on Page 3, Col. 2)



## S.P.E. AWARDED MEMBERSHIP PLAQUE AT NSPE 25th ANNUAL MEETING

The annual meeting and Silver Anniversary of the SPE was held at the Commodore Hotel in New York City, June 17, to 20, 1959, and was attended by the following from Illinois:

Messrs. Frank W. Edwards, Director  
Melvin E. Amstutz, Director  
Clifford E. Missman, Alternate Director  
Cecil J. McLean, Director

Also present from Illinois was Mr. Alex Van Praag, Jr., Past National President, and Mr. Gerald Marks, Vice President of the Chicago Chapter of ISPE.



Detailed reports were presented on Wednesday afternoon concerning several phases of the Society's program, particularly as related to the Engineers in Industry. The membership contest report placed Illinois in first place in Group VI and a banner and plaque were presented to the Illinois delegation.

On Thursday morning, June 18, reports of the Professional Development Group and Professional Relations Group were presented, and in the afternoon reports on Policy Operations, Public Relations and Organizational Functions Groups were presented. Fri-

day morning, June 19, was devoted to meetings of Functional Sections sponsored by Engineers in Government, Engineers in Private Practice, and Engineers in Industry and Education.

An outstanding program was presented on Friday afternoon on the subject, "The Merging Role of Engineering and Science" with the following participating: James E. Fairman, Sr., Vice Pres. of Consolidated Edison Co. of New York; Clarence H. Linder, Vice Pres., General Electric Co.; and John C. Calhoun, Vice Pres. for Engineering at Texas A. & M. College.

At the luncheon preceding the afternoon session, Mr. J. Carlton Ward, Jr., President of Vitro Corp. of America, spoke. All of the above were very thought-provoking papers.

Saturday morning's program was devoted to Professional Employment Group reports and a report of the Professional Conference Board for Industry.

At noon on Saturday a program honoring all Past Presidents of the Society was presented, and each one including Mr. Alex Van Praag, Jr., the tenth president in 1948 was specially recognized. Dr. David B. Steinman, the first President and the originator of the NSPE concept of a professional society was specially honored.

Mr. William F. Ryan, retired Vice President of Stone & Webster, was presented the NSPE award at the banquet on Saturday night. The new officers of NSPE for 1959-60 were installed at the meeting. Mr. Harold A. Mosher, of Eastman Kodak Company is the President for the coming year.

## NUCLEAR POWER

(Continued from Page 2)

A 60-ton core loading of slightly enriched uranium is expected to last as long as six years when full efficiency is achieved. A conventional coal fired generating plant the size of Dresden would burn about 3,600,000 tons of coal in the same period.

Key steps in the Dresden project include:

March 31, 1955—Proposal for building Dresden Nuclear Power Station filed with the Atomic Energy Commission.

July 22, 1955—\$45,000,000 contract signed with General Electric Company for construction of a 180,000 Kilowatt boiling water reactor.

May 4, 1956—Atomic Energy Commission issued construction permit for Dresden, and allocated a 40-year supply of nuclear fuel.

September 24, 1956—Illinois Commerce Commission authorized construction of Dresden.

November 28, 1956—Excavation and site preparation started.

June 12, 1957—Major construction work began.



## SLIPPERY SEALS

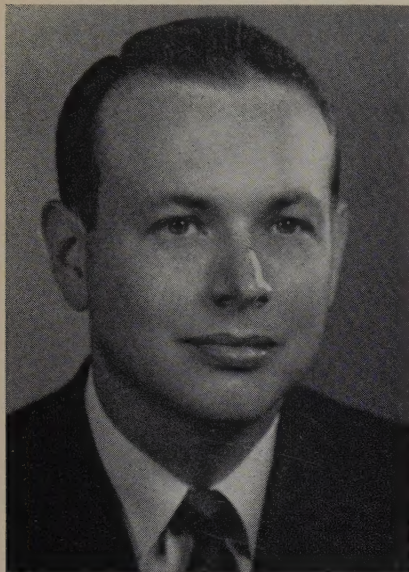
By HOWARD J. DE PREE, P.E.

Member of the Illinois Bar

Whenever I talk or write about the problem of seals, I confess a sense of embarrassment. This stems from the fact that unlike most engineering topics, discussions of engineering seals have to be conducted on a kindergarten level. Since the art of applying seals is only crudely developed, I must talk about the most elementary matters to a sophisticated audience that is

expecting me to be profound.

One reason for the difficulty in teaching engineers how to seal is that it looks easy. If there is one thing upon which almost everyone prides himself, it is his ability to use the tools of his profession or trade. This is especially true of engineers. Not only do they underestimate the difficulties of sealing, but they tend to



HOWARD DEPREE

think of themselves as individually accomplished. It is difficult to sell a man a new suit when he considers himself already well accoutered.

This poses a dilemma. If I am to make this subject clear to you, I must oversimplify it to the point of confirming your natural prejudices. On the other hand, if I am to paint a true impression, I must frighten or confuse you with a bewildering mass of principles, approaches, and details. I will do my best to take a middle course.

First of all, do you own a seal? If your answer is an emphatic yes, give yourself an "E" for being prepared. However, if you unfortunately have spent your earnings on mink, get prepared to throw at least a fin toward the purchase of your new seal. Section 13 of the Illinois Professional Engineering Act provides in part as follows:

"Each registrant shall, upon registration, obtain a seal of the design authorized by the Department bearing the registrant's name and the legend, 'Registered Professional Engineer of Illinois'."

It ought to go without saying that the legislative message is loud and clear. To go even farther, Section 28 of the Act announces that a violation of any of the

provisions of the Act is punishable by a fine of not less than \$100.00, nor more than \$500.00, or imprisonment in the county jail for a period of not exceeding three months, or both.

We come now to the basic steps in putting this seal to work. The first step is to explore the existing legal situation. Section 13 of the Act relates the following:

"... Plans and specifications rendered as professional engineering services by a Registered Professional Engineer shall be stamped with such seal during the life of the registrant's certificate, ..."

Over the years, the professional engineers have built up an immunity to this section of the Act. Some of us justify our actions with the thought that George doesn't stamp his drawings, so why should I. Others plead unfamiliarity with the sealing requirement. Some console themselves with the thought that their client's work was so elusive that it was impossible for him to do a perfect job, and that if their seal is not placed on the work, no discredit can be placed on them. Deception is good for football; it is very poor engineering. I ask you, each of you, if any of the foregoing excuses lend dignity and honor to the Engineering Profession.

Most engineers fail to realize that increasing numbers of non-engineers are preparing plans and specifications. Proving liability for negligence based on such plans and specifications should be uncomplicated and assured. In practice, however, this is not the case because a standard for sealing is not practiced by professional engineers.

The second step is to apply the substance of the legal message. Here are some of the rules for application of seals that may assist you and make the task completely understandable. Taken by itself, one of these rules doesn't amount to much. Certainly a single application of one of them will have only a slight effect. How much does a grain of sand weigh? Very little. But a sand pile can be heavy. Similarly, these rules are valuable for their cumulative effect; and their cumulative effect, I assure you, can be considerable.

The cardinal rule of all sealing can be stated in four words: *Use your seal consistently.* That is, don't limit the use of your seal only to situations in which the client or municipal body requires it.

Another good rule is: Keep your seal in your own possession so that no attempt can be made by another to use it.

The third thing to remember is that your seal is to be affixed only to work which has been done by you or under your personal supervision.

Fourthly, keep your seal up to date by keeping your registration up to date. It is unlawful for anyone to stamp or seal any documents after his registration certificate has expired or has been suspended or revoked.

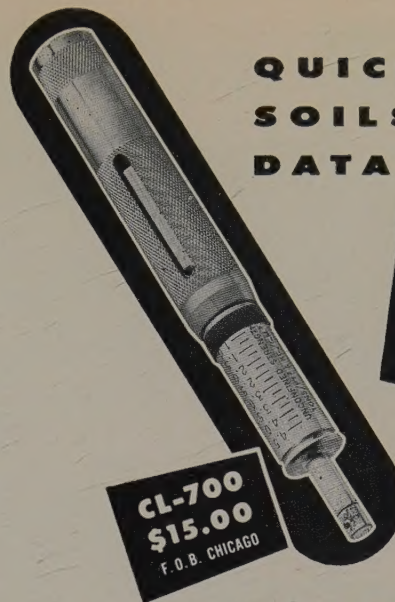
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## CURRENT BUDGET STUDY OF INTEREST

ISPE's Budget and Finance Committee is approaching the study of membership dues and of other Society income by making a long-range budget forecast. On May 2, 1959, the Board of Direction requested that the committee look into the dues situation as it relates to the 1960 NSPE increase. This projection of the Society's income and expenses is expected to pinpoint new activities requiring future budget attention.

High on the list for study will be chapter financial support for the young engineer (EIT) programs. It is also of interest that many members are asking ISPE to give legal support to the legislative program. Of greater challenge, however, is the preparation for serving the eventual expected membership of 5,000 to 10,000. The fiscal study and recommendations for the expanding service is scheduled to be in preliminary form in time for the September Board meeting.



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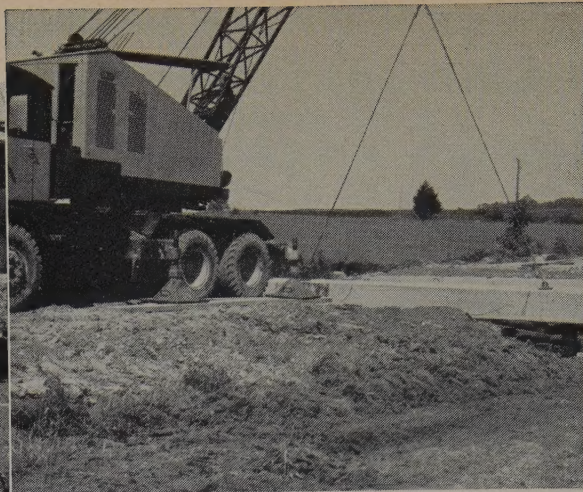
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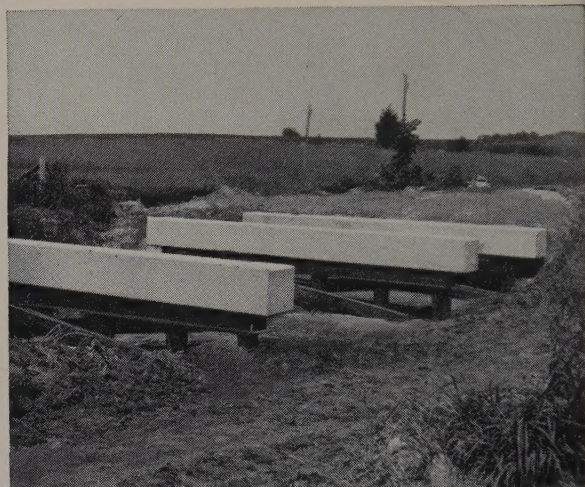
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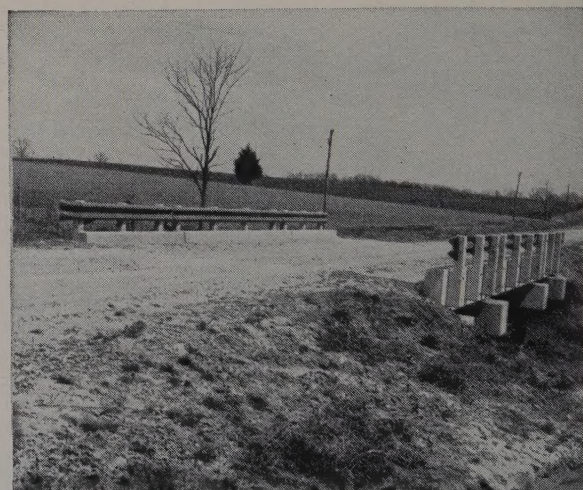
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## **STANLEY ENGINEERING COMPANY ADDS HAROLD F. SOMMERSCHIELD TO CHICAGO OFFICE STAFF**

Harold F. Sommerschield, formerly a partner in the architectural firm of Suter & Sommerschield, has become associated with the Stanley Engineering Company with headquarters in Chicago. His professional career has extended over a period of more than 30 years and includes experience in hydroelectric and steam power developments, industrial and commercial buildings, fixed bridges, airport developments and business administration. He had been particularly identified with reinforced concrete and prestressed concrete structures. For a number of years he served as a lecturer for the Portland Cement Association presenting ways and means of procuring quality concrete construction.

Active in professional societies, he has served as president of the Illinois section of the American Society of Civil Engineers and the Chicago chapter of the Illinois Society of Professional Engineers. Mr. Sommerschield lives at 1337 Lundergan, Park Ridge.

## **NORTHWEST SUBURBAN CHAPTER OFFICERS**

One of the new chapters of ISPE formed during 1958 is continuing to be active and growing. Officers for the coming year were elected at a recent meeting and are shown below.



Left to Right  
Ed Chelotti— Chapter Representative  
Bill Berk—Vice President  
Torhny Westerberh—President  
Joe Koenen—Secretary  
Carl Bowen—Treasurer





Representing organizations in various facets of Illinois' \$3 billion building industry, the group above are founders, consultants, and interested observers aiding in the formation of the Illinois Building Industry Alliance.

LEFT TO RIGHT, FRONT ROW: Gene C. Davis, Chicago, of the law firm Isham, Lincoln and Beale; Paul R. Lauschke, president of the Builders' Association of Chicago, Associated General Contractors of America; Meredith G. Jensen, Chicago, representing the Chicago Chapter of the Producers' Council of which he is president; Charles F. Behrensmeyer, IBIA pro-tem president, Quincy, Illinois, vice president of Architects Association of Illinois; Harold B. Larson, IBIA pro-tem vice president, Rockford, Illinois, chairman of the Illinois State Council of the Associated General Contractors of America; R. C. Dickerson, Urban, representing the State Council of the Associated General Contractors of America.

BACK ROW, LEFT TO RIGHT: J. Stewart Stein, Franklin Park, Illinois, former president of Construction Specification Institute; H. Mayne Stanton, Chicago, secretary-manager, Builders' Association of Chicago, Associated General Contractors of America; E. G. Hart, Chicago, president of Chicago Building Congress; Phillip Will, Jr., Chicago, first vice president of American Institute of Architects; John R. Fugard, Jr., Chicago, president, Chicago Chapter, American Institute of Architects; H. E. Hilton, Springfield, former executive secretary, Central Illinois Builders, Associated General Contractors of America; and James St. Clair, Chicago, executive secretary, Concrete Contractors Association.

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## SUMMARY

### Minutes of Board of Direction Meeting

June 6, 1959—Hotel Kaskaskia, LaSalle, Illinois

First Vice President Hudson presided in President's absence; 21 voting members of Board present, 19 sent, 6 non-Board members present.

Minutes of meetings of April 30, May 1 and May 15 approved with corrections.

Illinois wins first place in NSPE membership election test; Texas second.

ISPE part of joint committee with Illinois Association of Consulting Engineers and Society of Professional Land Surveyors to oppose union inroads on the profession.

Budget and Finance Committee preliminary report recommends ISPE dues increase; matter to be studied further with a report by August 8.

Board approves Constitution and Bylaws Committee recommendation that age limit of Affiliate membership not be lowered.

Board extends for six months its approval of new chapter Constitutions and Bylaws which had been made on an interim basis.

Members of Functional Section for Structural Engineers to be on three ISPE committees—Ethics and Practice, Legislation, and Fees and Salaries.

Ethics and Practice Committee to work toward attaining proper telephone listings for engineers.

Legislation Committee to be asked to accomplish amendment of the Structural Engineering Act to include words "to safeguard life, health and property."

Membership now 2581 regular members, 275 introductory members. Seventeen applicants accepted for membership by Board.

Department of Registration and Education gives administrative opinion that a person listing himself as an active partner in an engineering firm before he is fully registered as a Professional Engineer is in violation of the P. E. Act.

House Bill 366 (amendment to P.E. Act to allow corporate practice) in subcommittee.

House Bill 1171 (requiring County Superintendent of Highways to be registered Professional Engineer) up for third reading.

Senate Bill 46 (reorganization bill) set for hearing on June 9.


\$2500 needed for membership directory issue of Illinois Engineer, with each chapter to sell ten listings at \$15 each or subscribe to an equivalent space.

Insurance Committee asked to restudy group liability insurance program, and to study complaint of health and accident policy-holder.

1959 Convention preliminary report shows almost \$450 "in the black."

April 20, 21 and 22 set as dates for 1961 Convention in Peoria. Wm. J. Downer, of Capital Chapter, named General Chairman of the 1960 Convention.



A large concrete pipe is being hoisted by a crane. The pipe is thick-walled and has a smooth interior. In the background, construction workers and equipment are visible near a trench.

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## LEGISLATIVE REPORT

(Continued from Page 1)

June 29. To provide for the second part of the ISPE recommendation, House Bill 851 (the Hoover reorganizational study commission) was passed by the Senate and sent to the Governor for his signature.

The results of other legislation in which ISPE was active are as follows:

*House Bill 1081* (an amendment to the Municipalities Act to allow for the payment of preliminary professional services before an appropriation is voted). This bill passed the Senate June 29 and has gone to the Governor's office.

*House Bill 1171* (which would require County Superintendents of Highways to be registered Professional Engineers) failed to pass the Senate. This was the only bill which ISPE supported that did not pass, but there was a real accomplishment in the fact that this was the first time that a bill with this particular subject got so far before finally being defeated. In previous sessions, similar bills were defeated either in committee or never passed one of the two chambers.

*House Bill 366* (which would have permitted corporate practice of engineering) became highly controversial because different segments of the engineering profession could not agree on acceptable wordings of amendments, and the bill was killed in committee. This subject should be studied thoroughly and all factions should reach agreement prior to introduction of similar legislation in the future.

*House Bill 151* (which would have allowed Professional Engineers with a certain amount of experience to become Registered Land Surveyors without examination) was opposed by ISPE and was killed in committee.

*House Bill 1436* (which allowed former County Surveyors with more than ten years' experience to become Registered Land Surveyors) passed the Senate on June 30.

*House Bill 1011* (which would allow engineering degrees to be given at Southern Illinois University) failed to pass the Senate.

The cooperation of many individuals and the chapters of ISPE was the basis for the success which the Society was able to achieve. Future legislative programs should be planned well in advance in order to make positive contributions to the welfare of the State and the engineering profession.

## THE JOHN CRERAR LIBRARY

## TO RELOCATE

The John Crerar Library, one of the world's large collections of technical, scientific and medical literature, will move to the Technology Center campus Illinois Institute of Technology.

The announcement was made jointly today by P. Sedwick, president, for the Crerar Library board of directors, and by Dr. John T. Rettaliata, president Illinois Tech, for the Illinois Tech board of trustees.

The Crerar Library will have custody of the Illinois Institute's technical library collection and will be located in a new public library building to be constructed on the Illinois Tech campus. The action has been approved by the boards of both organizations.

The move is being made to provide a location for the Crerar Library in a center of technological education and scientific research, to make possible the expansion and improvement of its services, and to realize economies in the operation of the Library. Student faculty members and scientific personnel of Technology Center comprise the largest single group of users of the Crerar Library at this time.

The Library will continue to be under the jurisdiction of the Crerar board. Illinois Tech will turn over its estimated 125,000 engineering and scientific books and periodicals to the custody of the Crerar board and to the administration of the Crerar Library staff. The Crerar Library has approximately 1,000,000 books and periodicals of all classifications. The Illinois Tech Library staff will be consolidated with the Crerar staff resulting in a total group of approximately 85 people.

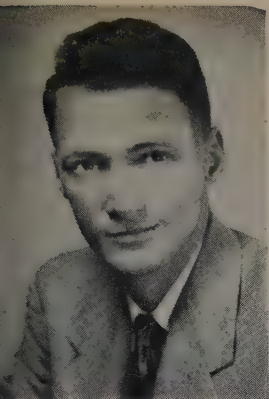
In constructing the new building for the John Crerar Library a separate section will be devoted to Illinois Tech's library of arts, humanities, and social science literature.

The move will be effected as soon as practical dependent upon when the new building can be built. A consulting firm is being retained by the two boards to study and recommend the most expedient methods of effectuating the move.

Crerar Library was founded in 1895 from proceeds of a trust fund established by John Crerar, a prominent Chicago businessman. The Library moved into its present building in 1920, and occupies 10 of the 11 floors.



## ENGINEERING FIRM'S PEOPLE-TO-PEOPLE PROGRAM WINS PUBLIC RELATIONS AWARD



The international people-to-people public relations program carried out by Soiltest, Inc., Chicago manufacturer of engineering testing equipment, was announced as a winner of a Certificate of Achievement at the annual convention of the American Public Relations Association. The company's international public relations activity was under the direction of its President, Theodore W. Van Zelst, registered Professional Engineer and a member of I.S.P.E.

The award, comparable in the public relations field to the Pulitzer Prize in the newspaper field, was underscored by the fact that the theme of the association convention was, "Public Relations, Vanguard of Global Understanding."

During the past few years Soiltest, Inc., has carried on an international public relations activity to both support the People-to-People Program urged by President Eisenhower and to improve communications

and sales activities between the firm and its overseas markets. The award recognition given this program attested to its success.

The basis of the program was visitations to many countries in Europe, the Middle East, the Near East, South and Central America and the Caribbean area by Soiltest executives including Thomas McNeil and Edward Brush, Vice Presidents and Van Zelst. The effectiveness of this program was evaluated by Conger Reynolds, Director of the Office of Private Cooperation of the United States Information Agency who said, "... This is a real people-to-people activity of the type we are anxious to promote. It multiplies impacts without taking the time of official representatives of the government..."

The program involved meeting with hundreds of engineers, professional people, the press and government officials in the course of the visits. Films were used to demonstrate examples of the engineering and scientific activity in the United States at a time when this country's prowess in these fields was somewhat dimmed by the feats of Soviet rocketry.

In addition to a program of this sort supporting our government foreign policy, it also increased understanding between the company and its many engineering contacts and had a measurable effect on company activity in the various countries.



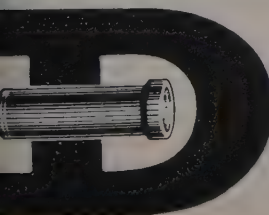
Robert F. Lloyd, Florida Engineer says...

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## SLIPPERY SEALS

(Continued from Page 4)

For a fifth rule, establish the habit of placing your seal on the original plan or specification immediately after its completion and before changes have been made on it. Affix your seal to prints of original drawings only after verifying the changes or revisions. In addition, require change numbers for all revisions.

Also, consider the fundamental matter of taking the trouble to educate yourself on what is involved in turning out a professionally adequate product according to the Canons of Ethics for Engineers. Place your mark only on such work that complies with the Canons.

I'm assuming at this point that you have thought out some additional rules. If you have, you will appreciate the difficulty of putting these ideas into words and the contingencies that must be considered.

In closing I would like to say that conscientious effort to make proper use of your seal pays rich rewards. The deep satisfaction that comes from wrestling with man-sized problems and producing solutions to them should be evidenced by your imprint on the work. Take a firm grip on your seal. Don't let it slip out of your grasp.

## ENGINEERING EDUCATION IN RUSSIA

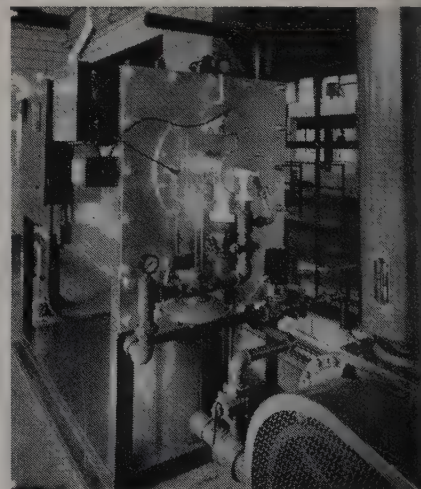
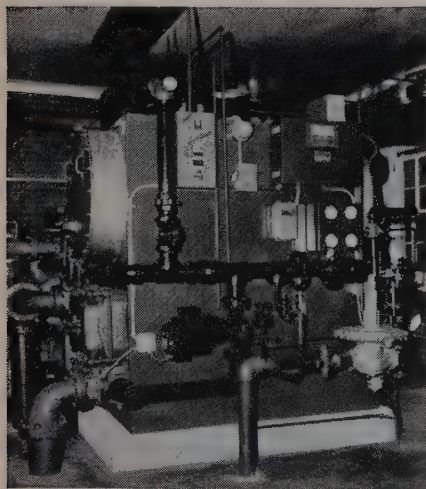
Dr. W. L. Everitt, Dean of Engineering, University of Illinois, spoke on "Engineering Education in Russia" on Thursday, May 28, at 6:30 P.M., I.S.P.E. dinner meeting at the Orlando Hotel in Decatur.

Dr. Everitt was a member of a group who toured Russia recently to study their engineering educational system. He is currently president of the Engineering Council for Professional Development, past president of the American Society for Engineering Education and the Institute of Radio Engineers, and has served as a member of the President's Committee on Scientists and Engineers.

This meeting was the annual student recognition night, and 25 high school seniors who plan to become engineers were guests.

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*Top—Rectangular Collectors at Morris; Baxter & Woodman, Consulting Engrs.*

*Right—CARBALL, CO<sub>2</sub> producer at Moline; Greeley & Hanson, Consulting Engrs.*

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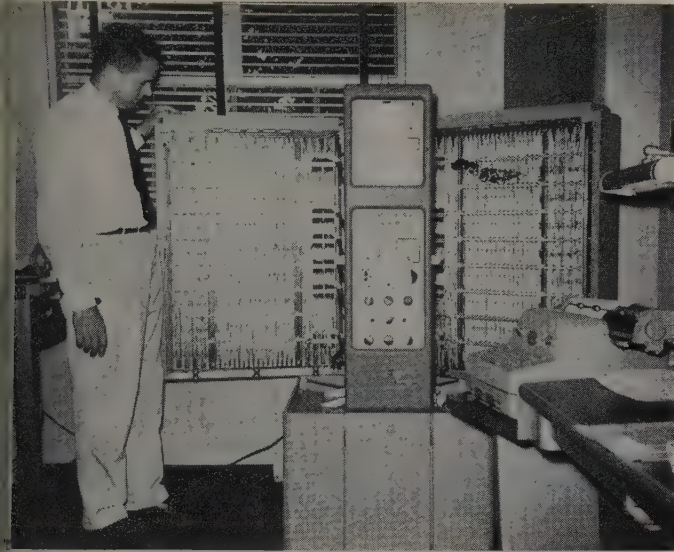
handling and treatment of solids-in-liquids combination. Write for recommendations as to process details and type of equipment best suited for your particular requirements.

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## ENGINEERING COMPUTER CENTER IN ILLINOIS

The State of Illinois is one of the few states in the nation to have a computer center devoted exclusively to performing engineering and scientific calculations for the public. The center is Midwest Computer Service, Inc., located in Decatur, Illinois. The calculations are performed on a modern "electronic brain," the Bendix G-15D engineering computer.



Jerry McCall gives us an inside look at the computer with its maze of wires and numerous electronic tubes which are the nerve and the brains of the machine.

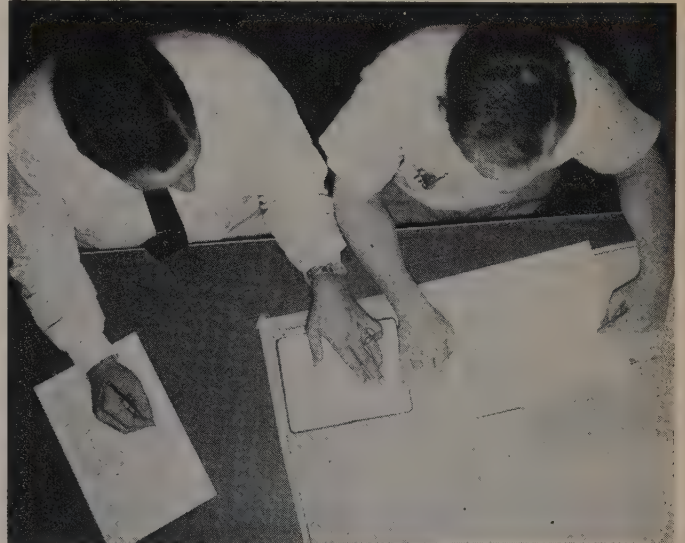
Only nine years ago there was not a single full scale electronic computer in operation in the country. Today there are over 2000 general purpose digital computers in operation. The purchase price of these machines runs from \$40,000 to \$4,000,000, and the annual cost of operating these computers is usually twice the annual cost of leasing them.

Due to these costs it is often difficult for a company to justify installing a computer solely for the purpose of performing engineering calculations and in many cases combined use of the computer for accounting work is not practical.

For this reason, two years ago seven consulting engineering firms in Central Illinois began making plans to finance a computer center as a joint enterprise. The center was to be an independent corporation and was to serve the public as well as the seven firms.

This was done and one year later the computer center was opened. Rather than employ a large staff to solve problems on the computer, it was decided to operate the computer center on an "open shop" basis; that is each client is encouraged to train his own engineers in the use of the computer. Then the computer is actually turned over to these engineers to solve their problems; however, some of the engineering problems are solved by the computer staff itself.

As the engineers began to use the computer, systems were developed to transmit data effectively between the engineering offices and the computer center. Teletype machines were installed and are used together with the telephone for rapid transmission. This frequently results in an entire problem being solved in less than an hour for out of town firms. Other problems are mailed or brought in by the engineers themselves. Data forms were prepared for each problem so that engineers with no training on the computer could send in problems and interpret the computer results. The engineers prepared "Programs" for repetitious problems so that low cost clerical personnel could be used by the computer center in operating the computer to solve the problems.



Transcribing data from field books to data forms.



Shelby Hunter, Chief Programmer of the center, shown making calculations of final results on the Bendix G-15-D Computer.

A "program" is a set of instructions to the computer to tell it how to solve a particular problem. These  
(Continued on Next Page)





Jerry McCall, Executive Vice President of the Midwest Computer Service, is shown punching data from data forms into paper tape with the Flexowriter. The machine on the right is a teletype machine on which requests are received from clients who have teletype service.

programs are stored permanently on punched paper tape and are read rapidly by the computer each time a particular problem is to be solved. Only the data changes from one run to the next.

To date a wide variety of problems have been solved by the computer. These include highway, bridge, sanitary, public utility, formula feed, and cost estimation problems. If appropriate problems are selected for the computer, the accuracy and fantastic speeds at which the computer operates makes it a highly economical tool for engineers to use.

Through this computer center the engineering companies and engineering research departments in Illinois have a rare opportunity to avail themselves of the services of an "electronic brain."



J. H. Morgan and Max Suter, members of Champaign County Chapter, who will be moving from Illinois. The Morgans to Las Vegas, Nevada, and the Suters to San Clemente, California.

## EXECUTIVE DIRECTOR SPEAKER FOR THE JUNE MEETING CHAMPAIGN CO. CHAPTER

Champaign County Chapter observed Ladies' Night on Thursday, June 4, with a meeting at Allerton House, Allerton Park.

ISPE Executive Director Goddard spoke on the achievements of the Society during the past year and the outlook for the future. He gave a report of the legislative program and also on Arthur Beazley, the NSPE Armeo scholarship winner sponsored by the Champaign County group.

Two long-time members of the chapter, J. H. Morgan and Max Suter, were given recognition for their service to the chapter and the Society.



L. to R., back row: Max Suter, J. H. Morgan, Herb Byers, J. Raymond Carroll, George Sodemann, and Warren Daniels. The wife of each is directly in front of her husband.







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### FUNCTIONAL SECTION FOR REGISTERED STRUCTURAL ENGINEERS ACTIVE

First meeting of the newly organized functional section for registered structural engineers was held at the Annual Convention of the Illinois Society of Professional Engineers in Rockford, April 30.

The new group reviewed progress of the Chicago Chapter of Ethics and Practice during the past year and asked members to participate more forcibly in activities of their local Ethics committees.

The following officers were elected to the structural group: Roland Olson, Chicago, Chairman; D. Voorhees, Alton, Vice-Chairman; Louis A. Bacon, Chicago, Secretary-Treasurer; Arthur Harris, Chicago, Committeeman; and Harry Cordes, Rockford, Committeeman.

The Section has requested Board action in appointing members to three ISPE State Committees, and the following members have been named: H. F. Sommerschield to the Ethics and Practice Committee, John P. Gnaedinger to the Legislation Committee, and Frank Wells to the Fees and Salaries Committee.

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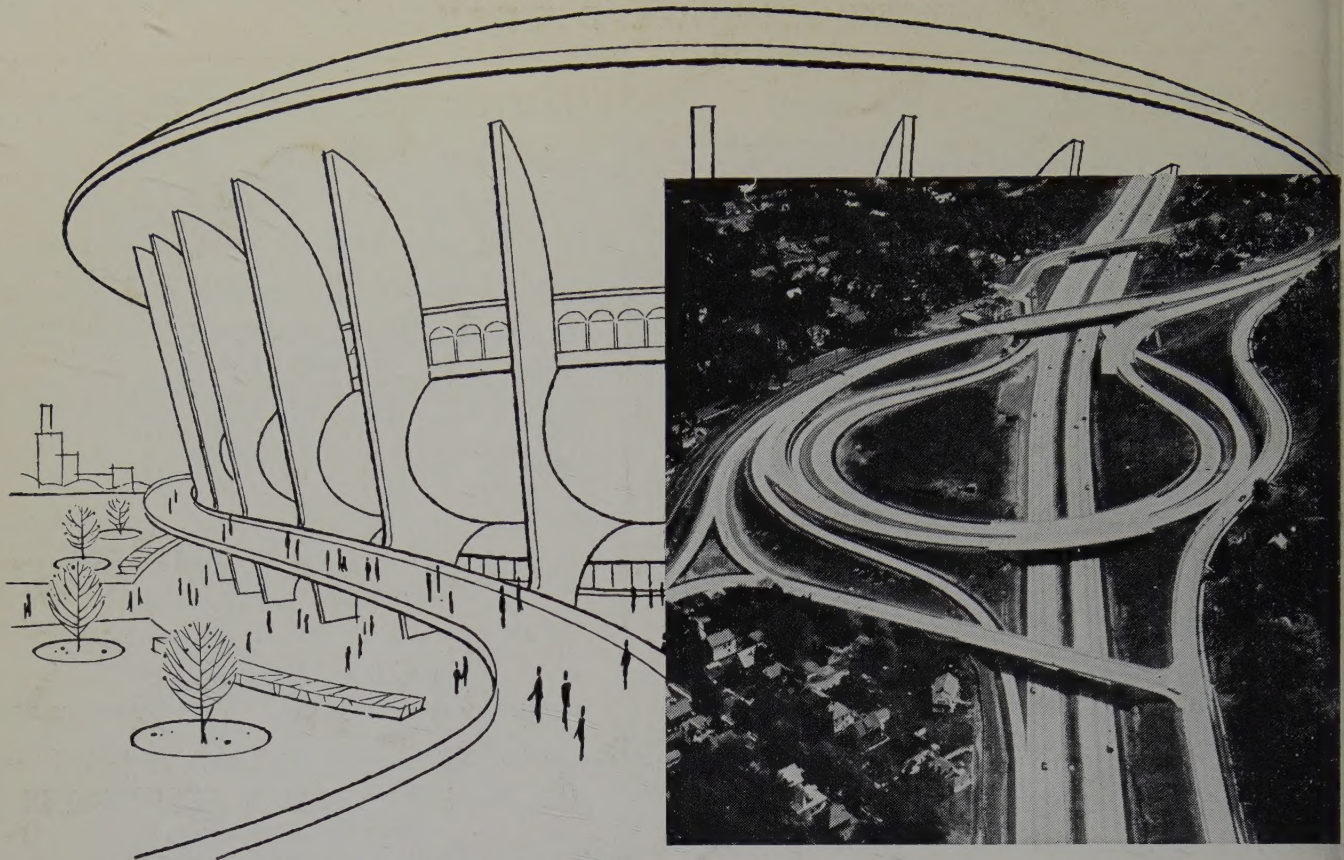
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